# 10 Economic change 1815–1846: the growth of railways

**10.1** Why did changes occur to the railway industry between 1815 and 1846?
**10.2** What were the key features of railways in the development of the Victorian economy and society between 1815 and 1846?
**10.3** Historical interpretation: Has the impact of the railways been exaggerated?

## Key Issues

- *What were the most significant developments in the railway industry during this period?*
- *Why was railway growth so important to the development of the Victorian economy in this period?*
- *Did railways change Victorian society in this period?*

## Framework of Events

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| **1825** | Opening of the Stockton–Darlington Railway in north-east England |
| **1829** | Rainhill trials take place for the Liverpool–Manchester Railway |
| **1830** | Liverpool–Manchester Railway opens |
| **1837–40** | Period of the first 'railway mania' takes place, brought about primarily by an investment boom. This period witnesses the rise of George Hudson as a railway magnate. |
| **1838** | Opening of the London–Birmingham Railway |
| **1841** | Thomas Cook sells his first excursion ticket |
| **1844** | Gladstone's Railway Act lays down the minimum standards for new railway companies to follow |
| **1845–47** | Period of the second 'railway mania' begins when at least 4,500 miles of track are laid. |

## Overview

In an economic sense, the years 1815 to 1846 were dominated by the growth of railways. Few areas of the economy were untouched by the unparalleled speed and dramatic changes brought about by this expansion. Industries such as coal, iron and timber grew on the strength of the railways. The social impact was equally impressive: regional isolation was overcome and the growth of cities such as Birmingham, Manchester and London speeded up. New professions – such as civil engineering, surveying and architecture – responded to the new challenges placed before them. Railways also brought improvements in trade, communications and postal services, and perhaps even the introduction of a standard measure of time across the country (General Standard Time – GST).

River Sankey and the crossing of the Chat Moss bog). As the teething problems faced by the early engineers were overcome, more advanced steam engines and stronger wrought-iron rails added to the growth of goods and passengers on the ever-expanding railway system.

### *The creation of a railway network*

The success of these early ventures led to the formation of railway companies to exploit the new developments. The investment opportunities soon proved highly attractive, and the public rushed to buy shares in the new ventures. 'Railway mania' had begun. By 1838, approximately 750 kilometres of new track had been built and a network of lines gradually developed. Whereas before railways had been regionally based, now they began to link different regions. London and Birmingham were connected by 1838, for example. The important industrial areas of South Wales were serviced by the Taff Vale Railway, and there were significant developments in the West Country and Scotland. By the early 1850s, all the major routes had been created, but there remained much scope for consolidation.

### *Government assistance*

Although the railway network was in private hands, and at times development was incoherent and badly planned, in the 1840s the Government began to take an interest in regulating the industry. A powerful parliamentary lobby, led by railway magnates such as George Hudson, pressurised the Government into encouraging more railways. The most important piece of railway legislation was passed in 1844 during Peel's second Ministry under William Gladstone, then President of the Board of Trade. This required:

- the creation of a Railways Board to carry out regular inspection of railway companies and investigate accidents;
- that trains should run at least once a day in each direction along a line, stopping at all stations;
- that to encourage passengers, fares should be no more than a penny a mile.

### *Increased demand*

*What were the major changes in the railway industry between 1815 and 1846?*

*Was the work of individuals more important than other factors in these changes?*

Railway development was, in many ways, a response to an increased demand as a result of industrialisation. The most obvious examples occur in the iron and coal industries. Coal was the essential raw material of the Industrial Revolution and railway development grew up in many areas to supply the demand for the substance. Many of the new networks were built originally to improve links with the coalmining industries. Developments in the iron industry proved to be no less important. The discoveries in the iron industry had a spin-off effect on the growth of the railways, such as an increase in demand for railtrack. Improved communications enhanced the development of other industries, such as the cotton industry in north-west England. The building of the Liverpool to Manchester Railway, for example, increased the easy transportation of the raw cotton from the port of Liverpool to the Lancashire textile mills.

Even so, some historians have questioned the impact of the railways and argued that they did not initiate these changes, but were rather a reaction to events already in progress as a result of the Industrial Revolution. To contemporaries, the railways were, more than any other economic development, a symbol of the age.

## 10.1 Why did changes occur to the railway industry between 1815 and 1846?

### *Technological change*

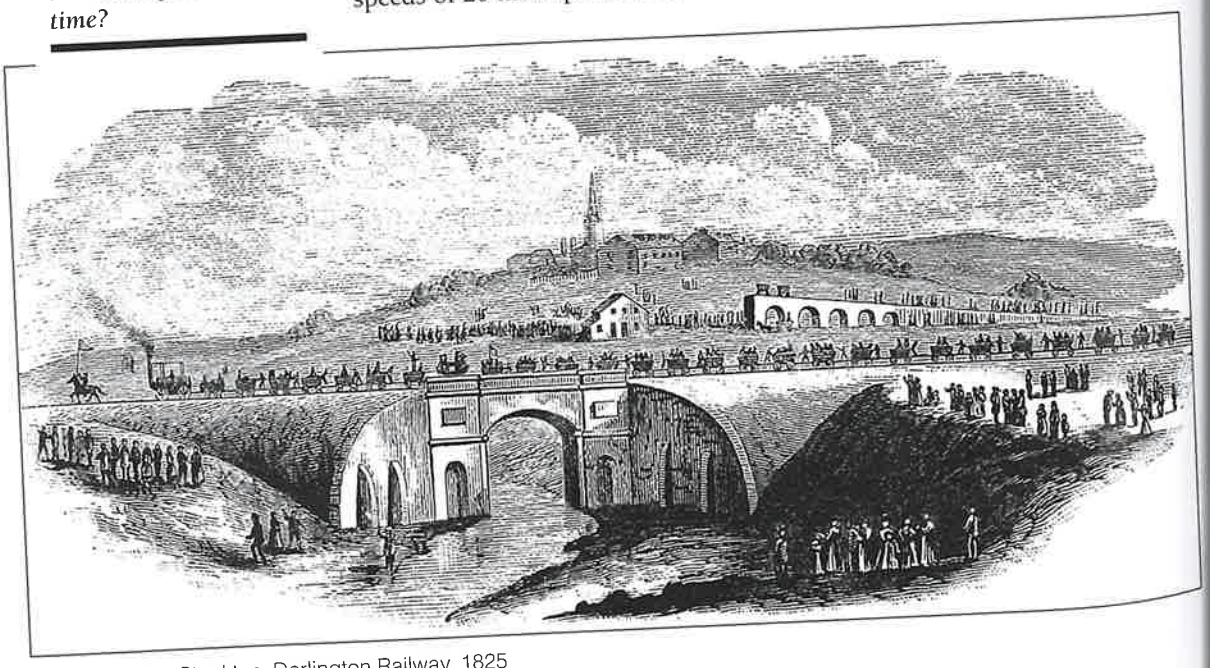
Coalmining provided the initial stimulus for railway development. Early experiments with railways involving wooden rails and horse-drawn wagons dated back to the 17th century. The first cast-iron rails were laid at Coalbrookdale in 1767, and by 1800 it is estimated that there were over 600 kilometres of track in existence, mostly associated with coalmining activities. Steam power led to new developments in engine construction, pioneered by men such as Richard Trevithick in South Wales and William Hedley in Durham, who designed the steam engine 'Puffing Billy' in 1813.

However, the man most associated with technological change was the Northumbrian engineer, George Stephenson. He revolutionised the railway industry through his vision and insight into mechanical problems. In 1825, he built the first railway to run passenger services: the Stockton–Darlington, with the famous engine 'Locomotion Number One'.

The success of the venture encouraged businessmen to look at the new form of transport as an alternative to canals and roads. Canals carried low-value bulk goods but were slow, and freight charges were high. Roads could carry high-value goods that were light in weight, but quantity was limited. The next great railway development was deliberately aimed at breaking the monopoly of the Bridgewater Canal between Manchester and Liverpool. Stephenson's Manchester–Liverpool Railway was a triumph, not only as a financial success but also in its technology (his engine 'The Rocket' reached speeds of 20 miles per hour), and in civil engineering (the viaduct over the

1. *Look at the picture. Why is this such a momentous occasion?*

2. *How reliable is this image in outlining popular enthusiasm for the railways at this time?*



Opening of the Stockton–Darlington Railway, 1825

## 10.2 What were the key features of railways in the development of the Victorian economy and society between 1815 and 1846?

The impact of the railways was certainly very significant in the early Victorian age, but the precise role of the railway industry in economic and social growth has recently been subject to intense historical debate (see below). Railways had an effect on most areas of Victorian life, but this was most apparent in the following areas:

- the creation of employment
- reduced journey times
- the growth of towns and cities
- the growth of the professions
- the food and retail industry
- a change in the landscape
- effects on other forms of transport.

### *The creation of employment*

The development of such an important industry was bound to create a huge demand for employment in associated industries. For example, the iron industry grew enormously: by 1840, it has been calculated that rails alone amounted to 15% of total output. As well as stimulating an export boom, it also led to the establishment of new ironworks such as Cyfartha, in south Wales. Coal output increased to meet the demand for steam engines and there were increases in productivity in both the brick and timber industries.

In addition, the new industry needed drivers, guards, signalmen, engineers and a host of station staff. **Corporate images** were developed as the new railway companies attempted to assert their new superiority over their local rivals. It was obvious that labourers were needed to build the new lines and although these 'Navvies' (or Navigators) had been heavily involved in the building of canals, it was during the railway age that the term became most common. They acquired a sinister reputation for violence and alcoholism. J.R. Francis, a contemporary, described them in 1851 as 'rude, rugged and uncultivated. Possessed of great animal strength, collected in large numbers, living and working together, they are a class by themselves.' Estimates vary but about 300,000 navvies were employed in the railway industry by 1847. Many had fled Ireland during the Famine and came to England in search of work and a new life. The increase in the number of jobs available had a political consequence in that a large number of the working class found employment and were distracted from the more appealing elements of Chartism (see Chapter 9).

**Corporate images**: The new railway companies attempted to create a sense of identity by giving employees a uniform to distinguish them from other companies.

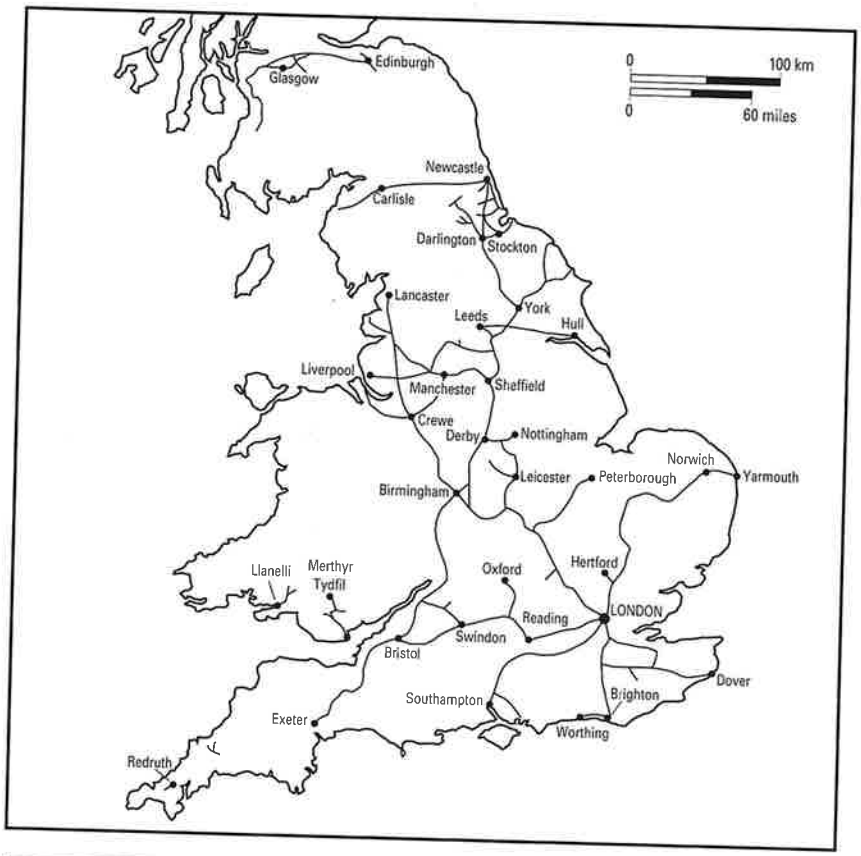
### *Reduced journey times*

The benefits of rail transport were to have a huge effect on journey times. Both the road and canal industries attempted to cut costs and offer attractive packages to travel, but they were unable to match the enormous improvements in travel time that railways provided. The journey between London and York, for example, had taken almost a day and a half by stagecoach. Now it was reduced to eight hours by train. These reduced times led to other important spin-offs. The railways broke down local isolation and created an integrated communication network. Men and women could now travel to and from work by train and leisure-time excursions became commonplace. Thomas Cook the travel agent offered his first holiday excursion ticket in 1841.

1. *Compare the two maps. Where does the greatest amount of railway building take place between 1845 and 1852?*

2. *Can you explain why this area became so densely populated by the railways?*

3. *How useful are maps to a historian studying the changes brought about by the railway age?*




Railway network in 1845


Railway network in 1852

### *The growth of towns and cities*

Some towns were specifically created for the purpose of servicing the new railway industry. Crewe and Swindon, at the beginning of the 20th century, grew from small villages into major railway centres. As well as increasing the size of the cities, railways also changed their physical appearance. The suburbs of the cities increased their middle-class orientation as a result of an improved rail network. On the coast, the railways helped to create the holiday resort. Seaside towns such as Blackpool and Southport grew due to their close connection with the railway industry. The cotton towns of Lancashire also acted as a stimulus to railway growth, as did the coalmining valleys of south Wales.

### *The growth of the professions*

The problems of land ownership and the skilled negotiation needed to conclude complex agreements led to the development of a flourishing legal trade to cater for the demand of the new industries. Lawyers were needed to arbitrate in disputes between interested parties and to take part in sale and conveyancing (process of transferring the legal ownership of land). Accountancy as a profession also developed from the huge sums of money that the new railway boom created. Compensation claims, bankrupt railway companies and mismanagement all helped those employed in this side of the industry. The sheer size of the new railway companies, such as the Great Western Railway, forced those in charge to adopt a new approach to management. This has led some critics to suggest that some railway managers employed an almost military-style attitude to disciplining the workforce.

### *The food and retail industry*

Railways were able to transport most food items quickly and safely, so that commodities such as milk could be transported overnight ensuring that it reached its destination in a fresh condition. Other items transported – such as fish, fresh vegetables and other dairy products – ensured that businesses would be able to extend their markets throughout the country and move out of their restricted area. This had an obvious beneficial effect: the retail trade grew to meet the new demand for goods. New shops were opened all over the country, helping to break down local isolation while ensuring that there was never a food shortage confined to a certain area. For the consumer, this meant lower prices and a wider choice. Some groups, such as farmers, initially opposed these developments as they were worried that cheap food would put them out of business, but they were gradually won over when they realised that their own products could be transported further afield.

**Isambard Kingdom Brunel (1806–1859)**
One of the most famous engineers and businessmen of the railway age, he brought a skill and insight to the new technology required for the railway building. Brunel's most famous achievement was the building of the Clifton suspension bridge. Towards the end of his career he became involved in ship design and this led to the building of the steamships the 'Great Western' and the 'Great Eastern'.

### *A change in the landscape*

The railway age transformed not only the urban areas but also the old rural environment. Railway architecture, such as viaducts and tunnels, were either an eyesore or a welcome addition to the panorama of the countryside depending on your point of view. Civil engineers such as Isambard Kingdom Brunel made fortunes out of these new developments, but many were opposed to what they regarded as the end of an era. Matthew Arnold, headmaster of Rugby School, regarded the building of a railway station at Rugby in 1839 as being the end of an era. Yet to most people the railway age gave the impression of being a society in transition, moving forward to feed the demands of a new and exciting generation.

## The effects on other forms of transport

Railways had an enormous effect on transportation by roads and canals. Stagecoach operators were unable to compete with either the reduction in journey times or the comfort that a modernised railway carriage could provide. Turnpike trusts were forced to raise tolls in their areas, but this led to large-scale protest, especially in south-west Wales where the **'Rebecca' riots** broke out in 1843.

**'Rebecca' riots**: These took place in rural Carmarthenshire and Cardiganshire in 1843 and were a social protest against an increase in tolls on the turnpike trusts, as well as being part of a protest against an English landowning class. Many of the protesters dressed up as women, hence the term 'Rebecca' riots.

Canals fared little better because railway companies tended to use them as a means of connecting transport links between routes. In some cases, railway companies bought up shares in a canal company for this purpose. Ultimately, railways had an advantage over other forms of transport in moving goods and people cheaply and faster over a wider area of the country. By 1850, long-distance road traffic had disappeared and many canals had become unprofitable enterprises. There was no longer the need for manufacturers to stockpile goods in the winter months, and capital could now be released and used more productively.

Perhaps it is too easy to exaggerate the effect of railways. Canals, for example, continued to carry more freight than the railways for several decades after 1830 and although long-distance road transport virtually disappeared, railways stimulated the growth of short-distance road transport – such as carrying goods and passengers to and from railway stations. Initially, the railways were built on a regional basis and often the gauges were different – usually either seven feet and a quarter inch (214 cm) which was used by the Great Western Railways built by Brunel, or four feet eight and a half inches (143.5 cm) which was the measurement accepted by other rail companies. To make matters even more confusing, Ireland had its own gauge width of five feet three inches (160 cm). Initially, these different measurements caused great difficulty!

## Other changes

Railways were in part responsible for the creation of a more literate public. Newspapers printed in London could now be sent by rail directly to different parts of the country so that everybody shared the same news and a new sense of identity. National political campaigns benefited from the fact that politics was transformed by these developments in transport: groups such as the Anti-Corn Law League in the 1840s were especially aware of the positive effects railways could have. The development of the postal service under Rowland Hill was also made easier by the railways. Letters and ideas could now be circulated to all areas of Great Britain and what amounted to a communication revolution had begun. Railways were also regarded as a great source of technological and scientific prestige and confirmed the often assumed view that Britain led the field in scientific advancement. The Great Exhibition of 1851 was as much a celebration of this fact as anything else. Finally, it can be argued that the railways began the British obsession with regular timekeeping on the basis that uniform railway timetables led the change to a common time for all of Britain.

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*1. What changes did the railways make to:*

*(a) the Victorian economy?*

*(b) Victorian society?*

*2. What do you regard as being the most significant change that railways made? Give reasons to support your answer.*